



# **STIC Search Report**

## **EIC 3700**

**STIC Database Tracking Number: 199165**

**TO: George Evanisko**  
**Location: RND 5E71**  
**Art Unit: 3762**  
**Monday, August 21, 2006**

**Case Serial Number: 09/649293**

**From: John Sims**  
**Location: EIC 3700**  
**RND 8B31**  
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### **Search Notes**

Attached are the results of the search involving an electrode array and uniformly graduated spacing. Although I didn't find a dead-on reference, please give them a look-over anyway.

11/3,K/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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09559617 INSPEC Abstract Number: A2005-20-8734-007, B2005-10-7520E-041

**Title: Modeling the relationship between psychophysical perception and electrically evoked compound action potential threshold in young cochlear implant recipients: clinical implications for implant fitting**

Author(s): Thai-Van, H.; Truy, E.; Charasse, B.; Boutitie, F.; Chanal, J.-M.; Cochard, N.; Piron, J.-P.; Ribas, S.; Deguine, O.; Fraysse, B.; Mondain, M.; Uziel, A.; Collet, L.

Author Affiliation: Inst. Federatif des Neurosci. de Lyon, Univ. Claude Bernard, Lyon, France

Journal: Clinical Neurophysiology vol.115, no.12 p.2811-24

Publisher: Elsevier,

Publication Date: Dec. 2004 Country of Publication: Ireland

CODEN: ECNEAZ ISSN: 1388-2457

SICI: 1388-2457(200412)115:12L.2811:MRBP;1-4

Material Identity Number: H271-2004-012

U.S. Copyright Clearance Center Code: 1388-2457/04/\$30.00

Language: English

Subfile: A B

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**Title: Modeling the relationship between psychophysical perception and electrically evoked compound action potential threshold in young cochlear implant recipients: clinical implications for implant fitting**

**Abstract:** In cochlear implant recipients, the threshold of the electrically evoked compound action potential (ECAP) has been shown to correlate with the perceptual detection threshold and maximum comfortable loudness levels (respectively, T- and C-levels) used for implant programming. Our general objective was to model the relationship between ECAP threshold and T/C-levels by taking into account their relative changes within each...

... of testing (from 1 to 18 months postimplantation). A total of 370 ECAP thresholds, measured in 49 children, using a Nucleus/sup (R)/ 24 cochlear implant, were compared with the corresponding T- and C-levels obtained at the same visit, for the same electrode. Response profiles for the whole group of patients were modeled across four test electrodes spaced equally along the electrode array from base towards apex. A linear regression model was constructed and the quality of the ECAP threshold-based predictions was assessed by testing for correlation...

... psychophysical levels for every 1  $\mu$ A increase in ECAP threshold. Offset between ECAP threshold and psychophysics profiles was found to vary significantly along the electrode array for the T-, but not for the C-level. In contrast with the parallel profiles method, our regression model predicted, within each subject, an average increase of 0.23  $\mu$ A (95% confidence interval : 0.18-0.28) in T-level for every 1  $\mu$ A increase in ECAP threshold. This correction improved the quality of T-level prediction ...

...predictability of our regression model seems to be better for middle and apical electrodes, its utilization should be extended to basal electrodes after 6 months' implant use.

Identifiers: cochlear implant recipient...

... electrode array ;

11/3,K/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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08205683 INSPEC Abstract Number: A2002-08-8734-017, B2002-04-7510D-028

**Title: Measuring the electrical stapedius reflex with stapedius muscle electromyogram recordings**

Author(s): Clement, R.S.; Carter, P.M.; Kipke, D.R.

Author Affiliation: Dept. of Bioeng., Arizona State Univ., Tempe, AZ, USA

Journal: Annals of Biomedical Engineering vol.30, no.2 p.169-79

Publisher: Biomed. Eng. Soc,

Publication Date: Feb. 2002 Country of Publication: USA

CODEN: ABMECF ISSN: 0090-6964

SICI: 0090-6964(200202)30:2L.169:MESR;1-C

Material Identity Number: A293-2002-002

U.S. Copyright Clearance Center Code: 0090-6964/2002\$15.00

Language: English

Subfile: A B

Copyright 2002, IEE

Abstract: Previous studies have demonstrated a correlation between cochlear **implant** recipients' comfort levels (C level, upper limit of dynamic range of stimulation) and the contralateral electrical stapedius reflex (ESR) threshold, detected by acoustic impedance change...

... this study were to investigate the utility of the stapedial electromyogram (EMG) for estimating onset and strength of the ESR. Ketamine-anesthetized guinea pigs were **implanted** with Nucleus **electrode arrays** and stimulated with biphasic current pulse trains (250 pps) via a Cochlear Corporation CI24M stimulator. Typical EMG recordings (obtained with bipolar microwire electrodes) contained easily...

... ranges spanning 700  $\mu$  A or 8 dB. Based on adaptation and temporal properties, the stimulus protocol (500 ms duration with 4-5 s interstimulus **intervals** ) was adequate for producing independent responses. The data presented are **consistent** with ESR characteristics (acoustic impedance technique) of cochlear **implant** recipients and with EMG properties of acoustically stimulated guinea pigs. Use of the EMG for characterizing the ESR may eventually be applied to human cochlear **implant** recipients as a guide in setting the upper limit of the dynamic range.

...Identifiers: cochlear **implant** recipients' comfort levels...

11/3,K/3 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0015343289 BIOSIS NO.: 200510037789

**Long-term data on children implanted with a short electrode array**

AUTHOR: Anderson Ilona (Reprint); Pitterl Markus; Skarzynski Henryk; Evans

Robert; Godey Benoit; Sainz Manuel Quevedo; D'Haese Patrick S C

AUTHOR ADDRESS: MED EL, Dept Clin Res, Furstenweg 77A, A-6020 Innsbruck, Austria\*\*Austria

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JOURNAL: International Journal of Pediatric Otorhinolaryngology 69 (2): p 157-164 FEB 05 2005

ISSN: 0165-5876

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

**Long-term data on children implanted with a short electrode array**

...ABSTRACT: or where full insertion of an electrode may not be possible due to abnormal structure of the cochlea. This study investigates outcomes of 18 children **implanted** with the short **electrode array**. These children were assessed using the EARS test battery pre-operatively and at a number of **intervals** thereafter. Results show a **consistent** improvement in time on most tests; these results appear to be independent of aetiology. Data from these children were compared to 18 matched pairs **implanted** with the standard COMBI 40+ **electrode array**. The short **electrode** children do not perform as well as the standard children initially, but do tend to catch-up at later test intervals. Results indicate the benefit...

**DESCRIPTORS:**

...METHODS & EQUIPMENT: MED-EL COMBI 40+ short **electrode array** --

11/3,K/4 (Item 2 from file: 5)  
DIALOG(R)File 5:BIOSIS Previews(R)  
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0008421179 BIOSIS NO.: 199294123020

**CORRELATION BETWEEN THE ANALGESIC EFFECT BY THALAMIC RELAY NUCLEUS STIMULATION AND SOMATOSENSORY EVOKED POTENTIALS RECORDED FROM THALAMUS**

AUTHOR: KUROKI A (Reprint); ITAGAKI S; SAITO S; NAKAI O  
AUTHOR ADDRESS: YAMAGATA UNIV SCH MED, DEP SURGICAL NEUROL, 2-2-2  
IIDA-NISHI YAMAGATA, 990-23, JPN\*\*JAPAN  
JOURNAL: Brain and Nerve (Tokyo) 44 (5): p435-441 1992  
ISSN: 0006-8969  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: JAPANESE

...ABSTRACT: factors influencing the analgesic effect. In order to determine the best position for the stimulating electrodes, we recorded somatosensory evoked potentials (SEPs) from stimulating electrodes **implanted** in the Vc and compared thalamic SEPs with the analgesic effect of Vc stimulation. The subjects were thirteen patients with deafferentation pain, four patients with thalamic lesions, seven patients with supratheralamic lesions and two patients with infrathalamic lesions. We inserted the **electrode array** into the Vc stereotactically, and fixed it so that stimulation-induced paresthesia would cover the painful area. The electrode array consisted of the four contact points of four electrodes **spaced** at 2 mm **intervals** within 10 mm from the tip. Using bipolar combinations of the four electrodes (twelve combinations in all), we stimulated the Vc for about half an...

11/3,K/5 (Item 1 from file: 35)  
DIALOG(R)File 35:Dissertation Abs Online  
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01907511 ORDER NO: AADAA-I3065132

**Multiple rhythms in the firing patterns of gonadotropin-releasing hormone neurons**

Author: Nunemaker, Craig Stuart  
Degree: Ph.D.  
Year: 2003  
Corporate Source/Institution: University of Virginia (0246)

Source: VOLUME 63/09-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
PAGE 4073. 131 PAGES  
ISBN: 0-493-83931-3

...recordings of firing patterns were made using two model systems. The first series of experiments utilized immortalized GnRH neurons (GT1 cells) grown onto multi-micro **electrode arrays** to observe artificial network activity among multiple cells. Results indicated that GT1-7 cells at several different locations within a culture displayed low frequency rhythms. When combined, these low frequency component rhythms produced an overall pattern that was **consistent** with previous reports of secretory pulse **intervals**, suggesting network interactions produce appropriate secretory patterns. For the second set of experiments, targeted extracellular recordings were made from green-fluorescent-protein-expressing GnRH neurons...

...the dominant ionotropic neurotransmitters gamma-aminobutyric acid and glutamate did not change patterns in neurons recorded from ovariectomized (OVX) mice. Blockade in OVX plus estradiol **implanted** mice, however, resulted in OVX-like patterns in 50% of GnRH neurons; these were located in the medial preoptic area. This suggests that estradiol effects...

11/3,K/6 (Item 1 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
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12667379 PMID: 10752481

**Spatial spectral analysis of human electrocorticograms including the alpha and gamma bands.**

Freeman W J; Rogers L J; Holmes M D; Silbergeld D L  
Department of Molecular and Cell Biology, University of California, Berkeley 94720-3200, USA.

Journal of neuroscience methods (NETHERLANDS) Feb 15 2000, 95 (2) p111-21, ISSN 0165-0270--Print Journal Code: 7905558

Contract/Grant No.: MH06686; MH; NIMH

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Spatial spectral analysis is essential for deriving spatial patterns from simultaneous recordings of electrocorticograms (ECoG), in order to determine the optimal **interval** between **electrodes** in **arrays**, and to design spatial filters, particularly for extraction of information about the dynamics of human gamma activity. ECoG were recorded from up to 64 electrodes...

... point at 0.40+/-0.05 c/mm specified an optimal value for a low pass spatial filter to remove noise, and an optimal interelectrode **spacing** of 1.25 mm to avoid undersampling and aliasing. An 8 x 8 array with that **spacing** would be 10 x 10 mm.

; Adolescent; Adult; Electrodes, **Implanted**; Electroencephalography; Humans; Image Processing, Computer-Assisted; Middle Aged; Research Support, U.S. Gov't, P.H.S.

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9/3,K/3

DIALOG(R)File 350:Derwent WPIX

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0009297663 - Drawing available

WPI ACC NO: 1999-227958/199919

Related WPI Acc No: 1999-610129

XRPX Acc No: N1999-168573

**Cardiac volume determining method**

Patent Assignee: CLEVELAND CLINIC FOUND (CLEV-N); MARQUETTE MEDICAL  
SYSTEMS INC (MARQ-N)

Inventor: GOPAKUMARAN B; OSBORN P K; PETRE J H; SCHLUTER P

**Patent Family** (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 5882312	A	19990316	US 199626222	P	19960917	199919 B
			US 1997920605	A	19970827	

Priority Applications (no., kind, date): US 199626222 P 19960917; US  
1997920605 A 19970827

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5882312	A	EN	17	12	Related to Provisional US 199626222

**Original Publication Data by Authority**

**Original Abstracts:**

...having a distal end, a proximal end and a plurality of spaced apart electrodes arrayed on the outer surface of the catheter. The electrodes are **spaced** apart a predetermined distance from each other to define a distal electrode, a proximal electrode and a plurality of pairs of **adjacent** electrodes between the distal and proximal electrodes to define volume segments within the chamber. The method includes the steps of providing a constant alternating current...

**Claims:**

...an elongated body having a distal end and proximal end, a plurality of spaced electrodes arrayed on the outer surface of the catheter and being **spaced** apart a predetermined distance from each other to define a proximal electrode and a distal electrode and a plurality of electrodes disposed there between, pairs of **adjacent** electrodes between the distal and proximal electrodes defining volume segments within the chamber, said method comprising the steps of positioning the catheter in a chamber...

...a constant alternating electrical excitation Efl having a first frequency f1 to the distal and proximal electrodes, measuring a first electrical parameter between pairs of **adjacent** electrodes located between the distal and proximal electrodes while the distal and proximal electrodes are energized with the constant alternating electrical excitation Efl, providing a constant amplitude alternating electrical excitation Ef2 at a second frequency f2 to the distal and proximal electrodes, measuring a second electrical parameter between pairs of **adjacent** electrodes located between the distal and proximal electrodes while the distal and proximal electrodes are energized with the current If2, determining the fractional change in...

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Set	Items	Description
S1	2145	ELECTRODE?()ARRAY???
S2	1189254	SPACE? ? OR SPACING?
S3	376	S1(S)S2
S4	635744	ADJACEN?
S5	65	S3(S)S4
S6	36	S5/2000-2006
S7	11764	GRADUAT???
S8	1	S3(S)S7
S9	29	S5 NOT S6
S10	12016	S2(5N)BETWEEN(5N)ELECTRODE? ?
S11	1	S1 AND S7 AND S10
S12	240813	INTERVAL? ?
S13	1	S7(5N)(S2 OR S12) AND S10
S14	0	S7(5N)(S2 OR S12) AND S1

File 350:Derwent WPIX 1963-2006/UD=200653  
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Set	Items	Description
S1	16922	ELECTROD???(5N)ARRAY???
S2	3008815	SPACE? ? OR SPACING?
S3	1653452	GRADUAT??? OR INTERVAL? ?
S4	696916	IMPLANT???
S5	4032669	CONSISTENT? OR UNIFORM? OR GEOMETRIC? OR ARITHMETIC?
S6	3119	S1 AND S4
S7	10	(S2 AND S3) AND S6
S8	80631	S5(10N)(S2 OR S3)
S9	11	S6 AND S8
S10	21	S7 OR S9
S11	6	RD (unique items)
File	2:INSPEC 1898-2006/Aug W2	
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File	95:TEME-Technology & Management 1989-2006/Aug W2	
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File	434:SciSearch(R) Cited Ref Sci 1974-1989/Dec	
	(c) 2006 The Thomson Corp	
File	441:ESPICOM Pharm&Med DEVICE NEWS 2006/Mar W1	
	(c) 2006 ESPICOM Bus.Intell.	



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Set	Items	Description
S1	7391	ELECTRODE??(3N)ARRAY??
S2	1549264	SPACE OR SPACES OR SPACED OR SPACING?
S3	431803	INTERVAL? ?
S4	1926573	S2 OR S3
S5	14377	GRADUAT???
S6	1787	S1 AND S4
S7	293	S5(5N)S4
S8	1	S6 AND S7
S9	1	S1 AND S7
S10	110727	IMPLANT???
S11	366	S1 AND S10
S12	0	S7 AND S11

File 344:Chinese Patents Abs Jan 1985-2006/Jan

(c) 2006 European Patent Office

File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)

(c) 2006 JPO & JAPIO

File 350:Derwent WPIX 1963-2006/UD=200653

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File 371:French Patents 1961-2002/BOPI 200209

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